

REMARKS

Claims 1-4 and 6-14 are pending. By this response, claims 1, 6 and 11 are amended. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Prior Art Rejection

The Examiner rejects claims 1, 6, 10 and 11 under 35 U.S.C. 102(b) as being unpatentable Eggert, Jr. (US 4,267,895) and claims 2-4, 7-9 and 12-14 under 35 U.S.C. 103(a) as being unpatentable in view of Eggert and Ishida et al. (US 5,705,865). These rejections are respectfully traversed.

The Examiner asserts that intakes 66 and 67 have "grates that would filter out leaves and other large debris." Applicants respectfully submit that such air intakes cannot be considered an "air filter" as understood by one of ordinary skill in the art and also by the application recited in applicants' claims. The grate 66 and 67 are for intaking air, they certainly cannot provide "filtered" air. An "air filter" is defined by Websters as "a porous article or mass through which a gas or liquid is passed to separate out matter in suspension." Other definitions of an "air filter" include "an article for removing particulate material from an air stream," and "prevent particulates including dust and dirt from entering an engine." These are conventional well understood definitions of "air filter" all relating to removing small particulates from an air stream and as defined with car engines, removing particulates, dirt, dust etc. from the air to allow clean air to enter the engine. Certainly Eggert's grate 66 and 67 cannot perform such tasks. Indeed, Eggert's grates are designed as an air intake and not an air filter as understood by in the conventional teachings or air filters and used in applicant's claims.

An air filter is always included as part of a thermal engine, such as internal combustion engines. Such an air filter (not air intake) would most likely be included in thermal engine 56. With reference to the drawings of Eggert and the description therein, it is clear that no "filtered" air (from an air filter) is redirected from the thermal engine to pass and cool the electric motor 61. Simply stated, Eggert fails to teach "wherein at least part of filtered air from an air filter for supplying filtered air to the thermal engine is redirected to pass in such a way that at least some internal parts of the electric motor will obtain cooling from the filtered air," as recited in claim 1; "channels for receiving said filtered air and directing the filtered air to pass in such a way that at least some internal parts of the electric motor will obtain cooling from said filtered air," as recited in claim 6; and "providing at least part of the filtered air from the air filter to the inside of the electric motor to provide cooling thereof," as recite in claim 11.

Applicants note that claims 1, 6 and 11 have all been amended in an effort to clarify that the filtered air is intended for the internal parts of the electric engine and not simply the outer parts of the electric engine. Only clean filtered air would be suitable for internal parts of the electric motor. Thus, filtered air intended for the thermal engine is appropriate for such function. Eggert fails to teach using filtered air redirected from the thermal engine to cool at least some internal parts of the electric engine.

There is nothing in Eggert that teaches anything more beyond rudimentary cleaning of the air to remove large particles, but not filter the air. The air is passed over the outer casings of the engine components, but not used to cool the inside of the electric motor. Thus, Eggert fails to teach the above noted features of independent claims 1, 6 and 11 as required.

Thus, in view of the above, Applicant respectfully submits that Eggert fails to teach, *inter alia*, wherein at least part of filtered air from an air filter for supplying filtered air to a thermal engine is redirected to pass in such a way that at least some internal parts of the electric motor will obtain cooling from the filtered air, as recited in claim 1;

an inlet for receiving filtered air from an air filter for supplying filtered air to a thermal engine and channels for receiving the filtered air and directing the filtered air to pass in such a way that at least some internal parts of the electric motor with obtain cooling from the filtered air, as recited in claim 6; and

passing the flow of air to a thermal engine through and air filter to produce filtered air and providing at least part of the filtered air from the air filter to the inside of the electric motor to provide cooling thereof, as recited in claim 11.

Ishida is provided to teach aspects of the dependent claims and not relied upon for teaching features of the independent claims. Nonetheless, Applicants provide the following comments with respect to Ishida. Ishida teaches a low voltage electric motor that uses a fan for introducing air into the motor. The fan acts to blow air onto the coils of the electric motor. Applicant respectfully submits that the cooling fan of Ishida does not act as an air filter and the cooling fan is designed only for an electric motor, and thus not part of a thermal engine.

More specifically, Ishida discloses a design to improve the cooling of what obviously is a generator for a 12 V DC system in a conventional car. It has stator windings 34 and 34R and a rotor without permanent magnets but with a DC activated armature coil 32 in the rotor. The rotor armature coil is fed over

two slip ring brushes. By adjusting the armature current, the output voltage can be kept at a desired value for all speeds over a certain lower limit.

Ishida does not have to worry about sand, dust and other pollutants being supplied by the air streams a and b passing the stator coil 34R. The voltage over the stator coils are suitable to charge a 12 V battery and are therefore in the order of 17 volts peak to peak, phase to phase and some 10 V peak over one phase.

The traction motors in a hybrid have coils fed by a battery of some 200 to 600 volt over switch transistors that causes the coil voltage to switch from, for example, +400 V to - 400 V in a fraction of a microsecond. This causes ringing that increases the peak voltages with some 50%. Pollution of surfaces is not a problem for the 10 V phase voltage of Ishida. It would be a major problem for a traction motor with 600 V peak over its coils.

As Ishida's machine is a generator, it will not generate any current unless it runs at a considerable speed. It can therefore use a fan assembled on its own shaft. If it is rotating slowly there will not be much air pressure, but no current and therefore no stator coil heating. A traction motor powering a car uphill in a traffic congestion has to supply lots of torque at no or a very low speed. It therefore requires a cooling system that is independent of its own speed. Thus, Ishida's teachings cannot be relied upon to teach aspects of the claimed invention.

Therefore, in view of the above, Applicant respectfully submits that independent claims 1, 6 and 11 are distinguishable over cited art. Dependent claims 2-4, 7-10 and 12-14 are also distinguishable over cited art for the above reasons as well as for additional features they recite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion


For at least these reason, Applicant respectfully submit claims 1-4 and 6-14 are distinguishable over cited art. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings Reg. No. 48,917 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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